

# sequence listing

<110> CreaGene Inc.  
 <120> METHOD FOR IMPROVING GENETIC STABILITY OF FOREIGN INSERT  
 NUCLEOTIDE SEQUENCE IN RECOMBINANT SINGLE-STRANDED RNA VIRUS  
 <130> CreaGene-USA-1  
 <150> KR 2001-6229  
 <151> 2001-02-08  
 <160> 95  
 <170> KopatentIn 1.71  
 <210> 1  
 <211> 300  
 <212> DNA  
 <213> Artificial Sequence  
 <220>  
 <223> SIV gag-100

1  
 agccccgagaa cattaaatgc ctgggtaaaa ttgatagagg aaaagaaatt tggagcagaa 60  
 gtagtgccag gatttcaggc actgtcagaa ggttgcaccc cctatgacat taatcagatg 120  
 ttaaattgtg tgggagacca tcaagcggct atgcagatta tcagagatat tataaacgag 180  
 gaggctgcag attgggactt gcagcaccca caaccagctc cacaacaagg acaacttagg 240  
 gagccgtcag gatcagatat tgcaggaaca actagttcag tagatgaaca aatccagtgg 300  
 300

<210> 2  
 <211> 300  
 <212> DNA  
 <213> Artificial Sequence  
 <220>  
 <223> SIV gag-100/M

2  
 agtccaagaa cattaaatgc atgggtaaaa ttaatagaag aaaaaaaatt tggagcagaa 60  
 gtagttccag gatttcaagc attatcagaa ggttgtactc catatgatat taatcaaag 120  
 ttaaattgtg taggagatca tcaagcagct atgcaaatta taagagatat tataaatgaa 180  
 gaagctgcag attgggattt acaacatcca caaccagctc cacaacaagg acaattaaga 240  
 gaaccttcag gatcagatat tgcaggaaca actagttcag tagatgaaca aattcaatgg 300  
 300

<210> 3  
 <211> 342  
 <212> DNA

# sequence listing

<213> Artificial Sequence

<220>

<223> SIV gag-114

<400> 3

ccagtacaac aaataggtgg taactatgtc cacctgccat taagcccgag aacattaaat	60
gcctgggtaa aattgataga ggaaaagaaa tttggagcag aagtagtgcc aggatttcag	120
gcactgtcag aaggttgcac cccctatgac attaatacaga tgttaaattg tgtgggagac	180
catcaagcgg ctatgcagat tatcagagat attataaacg aggaggctgc agattgggac	240
ttgcagcacc cacaaccagc tccacaacaa ggacaactta gggagccgtc aggatcagat	300
attgcaggaa caactagttc agtagatgaa caaatccagt gg	342

<210> 4

<211> 501

<212> DNA

<213> Artificial Sequence

<220>

<223> SIV p27-167

<400> 4

ccagtacaac aaataggtgg taactatgtc cacctgccat taagcccgag aacattaaat	60
gcctgggtaa aattgataga ggaaaagaaa tttggagcag aagtagtgcc aggatttcag	120
gcactgtcag aaggttgcac cccctatgac attaatacaga tgttaaattg tgtgggagac	180
catcaagcgg ctatgcagat tatcagagat attataaacg aggaggctgc agattgggac	240
ttgcagcacc cacaaccagc tccacaacaa ggacaactta gggagccgtc aggatcagat	300
attgcaggaa caactagttc agtagatgaa caaatccagt ggatgtacag acaacagaac	360
cccataccag taggcaacat ttacaggaga tggatccaac tggggttgca aaaatgtgtc	420
agaatgtata acccaacaaa cattctagat gtaaaacaag ggccaaaaga gccatttcag	480
agctatgtag acaggttcta c	501

<210> 5

<211> 450

<212> DNA

<213> Artificial Sequence

<220>

<223> SIV p27-150

<400> 5

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gcctgggtaa aattgataga ggaaaagaaa tttggagcag aagtagtgcc aggatttcag	120

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gcactgtcag aaggttgac cccctatgac	attaatcaga tgttaaattg tgtgggagac	180
catcaagcgg ctatgcagat tatcagagat	attataaacg aggaggctgc agattgggac	240
ttgcagcacc cacaaccagc tccacaacaa	ggacaactta gggagccgtc aggatcagat	300
attgcaggaa caactagttc agtagatgaa	caaatccagt ggatgtacag acaacagaac	360
cccataccag taggcaacat ttacaggaga	tggatccaac tggggttgca aaaatgtgtc	420
agaatgtata acccaacaaa cattctagat		450

<210> 6  
 <211> 324  
 <212> DNA  
 <213> Artificial Sequence

<220>  
 <223> SIV env-108

<400> 6  
 acttctactt ggtttggtt taatggaact agagcagaaa atagaactta tatttactgg 60  
 catggtaggg ataataggac tataattagt ttaaataagt attataatct aacaatgaaa 120  
 tgtagaagac caggaaataa gacagtitta ccagtcacca ttatgtctgg attggttttc 180  
 cactcacaac caatcaatga taggccaaag caggcatggt gttggtttgg aggaaaatgg 240  
 aaggatgcaa taaaagaggt gaagcagacc attgtcaaac atcccaggta tactggaact 300  
 aacaatactg ataaaatcaa tttg 324

<210> 7  
 <211> 324  
 <212> DNA  
 <213> Artificial Sequence

<220>  
 <223> SIV env-108/M

<400> 7  
 actagcactt ggttcggctt caacggaact agggcagaga acagaactta catctactgg 60  
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 tgcaggagac caggaaataa gacagtgcta ccagtcacca tcatgtccgg gttggtcttc 180  
 cactcacagc ccatcaatga caggcccaag caggcctggt gttggttcgg aggcaagtgg 240  
 aaggatgcc aaggaggt gaagcagacc attgtcaagc atcccaggta cactggaact 300  
 aacaacactg acaagatcaa tttg 324

<210> 8  
 <211> 294  
 <212> DNA  
 <213> Artificial Sequence

# sequence listing

<220>  
<223> HIV-1 env-98

<400> 8  
ttaaatggca gtctagcaga agaagacata gtaattagat ctgaaaattt cacagacaat 60  
gctaaaacca taatagtaca gctaaatgaa tctgtagtaa ttaattgtac aagacccaac 120  
aacaatacaa gaagaagggtt atctatagga ccaggggagag ctttttatgc aagaagaaac 180  
ataataggag atataagaca agcacattgt aacattagta gagcaaaatg gaataacact 240  
ttacaacaga tagttataaa attaagagaa aaatttagga ataaaacaat agcc 294

<210> 9  
<211> 294  
<212> DNA  
<213> Artificial Sequence

<220>  
<223> HIV-1 env-98/M

<400> 9  
ttaaatggca gtctagcaga agaagacata gtaattagat ctgaaaattt cacagacaat 60  
gctaaaacca taatagtaca gctaaatgaa tctgtagtaa ttaattgtac aagacccaac 120  
aacaatacaa gaagaagggtt atctatagga ccaggggagag ctttttatgc aagaagaaac 180  
ataataggag atataagaca agcacattgt aacattagta gagcaaaatg gaataacact 240  
ttacaacaga tcgtgatcaa gtttcgggag aagttccgga acaagacgat cgcc 294

<210> 10  
<211> 249  
<212> DNA  
<213> Artificial Sequence

<220>  
<223> HIV-1 env-83

<400> 10  
ttaaatggca gtctagcaga agaagacata gtaattagat ctgaaaattt cacagacaat 60  
gctaaaacca taatagtaca gctaaatgaa tctgtagtaa ttaattgtac aagacccaac 120  
aacaatacaa gaagaagggtt atctatagga ccaggggagag ctttttatgc aagaagaaac 180  
ataataggag atataagaca agcacattgt aacattagta gagcaaaatg gaataacact 240  
ttacaacag 249

<210> 11  
<211> 213  
<212> DNA  
<213> Artificial Sequence

## sequence listing

<223> HIV-1 env-71

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ctaaatgaat ctgtagtaat taattgtaca agacccaaca acaatacaag aagaaggtta      60
tctataggac cagggagagc attttatgca agaagaaaca taataggaga tataagacaa      120
gcacattgta acattagtag agcaaaatgg aataacactt tacaacagat agttataaaa      180
ttaagagaaa aatttaggaa taaaacaata gcc                                     213

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<211> 381

<213> Artificial Sequence

<223> PV 2-127

cgctgacag	ccgtagagac	aggggccacc	aacccattgg	tgccttcaga	cacggtacaa	60
actcgtcacg	tcatccaaaa	gcggacgcgg	tcggagtcta	cggttgagtc	tttcttcgca	120
agaggagctt	gtgtggccat	tattgaagtg	gataatgatg	ctccaacaag	gcgtgccagt	180
aaattatttt	cagtctggaa	gataacttac	aaggacaccg	ttcagttaag	acgtaagttg	240
gagttcttta	catattcaag	gtttgacatg	gagttcacct	ttgtggttac	atccaattat	300
accgatgcaa	acaatgggca	cgactgaat	caagtttacc	agataatgta	cataccacct	360
ggggcaccga	tccctggcaa	g				381

**<211>**      **354**

<213> Artificial Sequence

<223> PV 2-118

gcttgtgtgg	ccattattga	agtggataat	gatgctccaa	caaggcgtgc	cagtaaatta	60
ttttcagtct	ggaagataac	ttacaaggac	accgttcagt	taagacgtaa	gttgaggattc	120
tttacaatatt	caaggtttga	catggagttc	acctttgtgg	ttacatccaa	ttataccgat	180
gcaaacaatg	ggcacgcact	gaatcaagtt	taccagataa	tgtacatacc	acctgggggca	240
ccgatccctg	gcaagcggaa	tgattacaca	tggcaaacgt	catctaacc	atcagtgttt	300
tacacttacg	gggcacctcc	agctagaata	tcagtgcct	acgtgggcat	tgcc	354

# sequence listing

<210> 14  
<211> 330  
<212> DNA  
<213> Artificial Sequence

<220>  
<223> PV 3-110

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gcgtgcgtcg ctattattga ggtggacaat gaacaaccaa ccacccgggc acagaaacta 120  
tttgccatgt ggcgcattac atacaaagat acagtgcagt tgcgccgtaa gttggagttt 180  
ttcacatact ctcgttttga catggaattc accttcgtgg taaccgcaa cttcaccaac 240  
gctaataatg ggcattgcact caaccagggtg taccagataa tgtacatccc cccaggggca 300  
cccacaccaa agtcatggga cgactacact 330

<210> 15  
<211> 480  
<212> DNA  
<213> Artificial Sequence

<220>  
<223> HCV core-160

<400> 15  
atgagcacia atcctaaacc tcaaagaaaa accaaaagaa acaccaaccg tcgcccacia 60  
gacgtcaagt tcccggggcg tggtcagatc gttggtggag ttacctggt gccgcgcagg 120  
ggccccaggt tgggtgtgcg cgcgactagg aagacttccg agcgggtcgca acctcgtgga 180  
aggcgacagc ctatcccaa ggctcgccaa cccgagggtg ggacctgggc tcagcccggg 240  
tacccttggc ccctctatgg caatgagggt ctgggatggg caggatggct cctgtcaccc 300  
cgcggtcttc ggcctagttg gggccccaca gacccccggc gtaggtcgcg taatttgggt 360  
aagggtcatc atactctcac atgcggcttc gccgacctca tggggtacat tccgctcgtc 420  
ggcgcccccc tagggggcgt tgccagggcc ttggcacatg gtgtccggct tctggaggac 480  
480

<210> 16  
<211> 300  
<212> DNA  
<213> Artificial Sequence

<220>  
<223> HCV core-100

<400> 16  
atgagcacia atcctaaacc tcaaagaaaa accaaaagaa acaccaaccg tcgcccacia 60

# sequence listing

gacgtcaagt tcccgggagg tggtcagatc gttggtggag ttacctgtt gccgcgcagg 120  
ggccccagggt tgggtgtgag cgcgactagg aagacttccg agcgggtcgca acctcgtgga 180  
aggcgacagc ctatcccaaa ggctcgccaa cccgagggtg ggacctgggc tcagcccggg 240  
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<210> 17  
<211> 399  
<212> DNA  
<213> Artificial Sequence  
  
<220>  
<223> PV 2.3-131

<400> 17  
gcgctgacag ccgtagagac agggggccacc aaccattgg tgccttcaga cacggtacaa 60  
actcgtcacg tcattcaaaa gcggacgcgg tcggagtcta cggttgagtc tttcttcgca 120  
agaggagctt gtgtggccat tattgaagtg gataatgatg ctccaacaag gcgtgccagt 180  
aaattatattt cagtctggaa gataactgaa ttcgagtcca caatagaatc attcttcgca 240  
cgcggggagc gcgtcgctat tattgagggt gacaatgaac aaccaaccac ccgggcacag 300  
aaactatttg ccatgtggcg cattacatac aaagatacag tgcagttgag ccgtaagttg 360  
gagtttttca catactctcg ttttgacatg gaattcacc 399

<210> 18  
<211> 336  
<212> DNA  
<213> Artificial Sequence  
  
<220>  
<223> PV 2.3-112

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ttttcagtct ggaagataac ttacaaggac accgttcagt taagacgtaa gttggagttc 120  
tttacaatatt caaggtttga catggagttc acctttgtgg ttacaggatc cgcggtcgctc 180  
gctattattg aggtggacaa tgaacaacca accacccggg cacagaaact atttgccatg 240  
tggcgcatga catacaaaga tacagtgcag ttgcgccgta agttggagtt tttcacatac 300  
tctcgttttg acatggaatt caccttcgtg gtaacc 336

<210> 19  
<211> 306  
<212> DNA

# sequence listing

<213> Artificial Sequence

<220>

<223> HBVcs

<400> 19

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ttgtgggttc acatttcctg tcttacgttt gggagacaaa ctgttcttga atatttggtg      60
tcctttggag tgtggattcg cactcctcct gcatatagac caccaaagtc ccctatctta      120
tcaacacttc cggaactac tgttggttaga gaattcccag gatcatcaac caccagcacg      180
ggaccatgca agacttgac agctcctgct caaggaacct ctatgtttcc ctcatgttgc      240
tgtacaaaac ctacggacgg aaactgcacc tgtattccca tcccatcatc ttgggccttc      300
gcaaaa                                           306

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<210> 20

<211> 360

<212> DNA

<213> Artificial Sequence

<220>

<223> HIV-1 mv3

<400> 20

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attaattgta caagaccaa caacaataca agaagaaggt tatctatagg accagggaga      60
gcattttatg caagaagaaa cataatagga gatataagac aagcacattg taacattgaa      120
ttcattaatt gtacaagacc caacaacaat acaagaagaa ggttatctat aggaccaggg      180
agagcatttt atgcaagaag aaacataata ggagatataa gacaagcaca ttgtaacatt      240
ctgcagatta attgtacaag acccaacaac aatacaagaa gaagggtatc tataggacca      300
gggagagcat tttatgcaag aagaaacata ataggagata taagacaagc acattgtaac      360

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<210> 21

<211> 240

<212> DNA

<213> Artificial Sequence

<220>

<223> HIV-1 PND8

<400> 21

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tctataggac caggagagc attttatgca tctataggac caggagagc attttatgca      60
tctataggac caggagagc attttatgca tctataggac caggagagc attttatgca      120
tctataggac caggagagc attttatgca tctataggac caggagagc attttatgca      180
tctataggac caggagagc attttatgca tctataggac caggagagc attttatgca      240

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# sequence listing

240

<210> 22  
<211> 450  
<212> DNA  
<213> Artificial Sequence

<220>  
<223> PVM-150/M

<400> 22  
gctaaggccg ttgcagcctg gaccctgaaa gccgctgcag gccaaagcctc caccgaaggc 60  
gactgcggtt gcccagccat catcgagggtc gataacgatg cccctaccaa gcgagccagc 120  
aagctcttca gcgaattcga ggtcgataat gagcagccca ctacccgagc ccagaagctc 180  
ttcgccatgt ggcgatcac ttacaaggac aatgatgcgc caactaagcg cgcattctaa 240  
ctgtgcgtcc gaattctacat gaagcccaag caggttcgat gctccggctg tcccgtatt 300  
atcgaagtgg ataacgacgc accaaccaaa cgggcatcaa agctggacaa ctaccagtcc 360  
ccatgcgcga tcaacgagca acctaccacc cgtgcgcaa agtccgctgg gtgcttctat 420  
cagaccgcg tcgtggttcc ctcaggttgt 450

<210> 23  
<211> 411  
<212> DNA  
<213> Artificial Sequence

<220>  
<223> PVM-137/M

<400> 23  
ttctaccaga cgcgagtggc tgtcccagac aacgaacagc cgactacccg ggcaggccaa 60  
gcctccaccg aaggcgactg cggttgccca gccatcatcg aggtcgataa tgagcagccc 120  
actaccgag cccagaagct cttcgccatg tggcgatatc cttacaagga caatgatgcg 180  
ccaactaagc gcgcattctaa actgtgcgtc cgaattctaca tgaagcccaa gcacgttcga 240  
tgctccggct gtcccgtat tatcgaagtg gataacgacg caccaaccaa acgggcatca 300  
aagctggaca actaccagtc ccatgcgcg atcaacgagc aacctaccac ccgtgcgcaa 360  
aagtccgctg ggtgcttcta tcagaccgcg gtcgtggttc cctcaggttg t 411

<210> 24  
<211> 396  
<212> DNA  
<213> Artificial Sequence

<220>  
<223> PVM-132/M

# sequence listing

<400> 24  
gctaaggccg ttgcagcctg gaccctgaaa gccgctgcag gccaaagcctc caccgaaggc 60  
gactgcgggtt gccagccat catcgaggtc gataatgagc agcccactac ccgagcccag 120  
aagctcttcg ccatgtggcg tatcacttac aaggacaatg atgcgccaac taagcgcgca 180  
tctaaactgt gcgtccgaat ctacatgaag cccaagcacg ttcgatgctc cggctgtccc 240  
gctattatcg aagtggataa cgacgcacca accaaacggg catcaaagct ggacaactac 300  
cagtcccat gcgcatcaa cgagcaacct accacccgtg cgcaaaagtc cgctgggtgc 360  
ttctatcaga cccgcgtcgt ggttcctca ggttgt 396

<210> 25  
<211> 31  
<212> DNA  
<213> Artificial Sequence

<220>  
<223> sense primer for PCR amplification of SIV gag-100

<400> 25  
attataccgc ggagcccgag aacattaaat g 31

<210> 26  
<211> 31  
<212> DNA  
<213> Artificial Sequence

<220>  
<223> antisense primer for PCR amplification of SIV gag-100

<400> 26  
attattgccg gccactgga tttgttcac t 31

<210> 27  
<211> 32  
<212> DNA  
<213> Artificial Sequence

<220>  
<223> sense primer for PCR amplification of SIV gag-114

<400> 27  
ttaattccgc ggccagtaca acaaataggt gg 32

<210> 28  
<211> 33  
<212> DNA  
<213> Artificial Sequence

<220>  
<223> antisense primer for PCR amplification of SIV gag-114

# sequence listing

<400> 28  
aatatagccg gccactgga ttgttcac tac 33

<210> 29  
<211> 31  
<212> DNA  
<213> Artificial Sequence

<220>  
<223> sense primer for PCR amplification of SIV p27-167

<400> 29  
atattaccgc ggccagtaca acaaataagg g 31

<210> 30  
<211> 33  
<212> DNA  
<213> Artificial Sequence

<220>  
<223> antisense primer for PCR amplification of SIV p27-167

<400> 30  
ttaattgccg gcgtagaacc tgtctacata gct 33

<210> 31  
<211> 32  
<212> DNA  
<213> Artificial Sequence

<220>  
<223> sense primer for PCR amplification of SIV p27-150

<400> 31  
tataatccgc ggccagtaca acaaataagg gg 32

<210> 32  
<211> 34  
<212> DNA  
<213> Artificial Sequence

<220>  
<223> antisense primer for PCR amplification of SIV p27-150

<400> 32  
aatattgccg gcatctagaa tgtttggtg gta 34

<210> 33  
<211> 32  
<212> DNA  
<213> Artificial Sequence

# sequence listing

<220>  
 <223> sense primer for PCR amplification of SIV env-108  
  
 <400> 33  
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 <210> 34  
 <211> 34  
 <212> DNA  
 <213> Artificial Sequence  
  
 <220>  
 <223> antisense primer for PCR amplification of SIV env-108/M  
  
 <400> 34  
 tatattgccg gccaaattga ttttatcagt attg 34  
  
 <210> 35  
 <211> 35  
 <212> DNA  
 <213> Artificial Sequence  
  
 <220>  
 <223> sense primer for PCR amplification of HIV-1 env-98  
  
 <400> 35  
 ataataccgc ggttaaattgg cagtctagca gaaga 35  
  
 <210> 36  
 <211> 39  
 <212> DNA  
 <213> Artificial Sequence  
  
 <220>  
 <223> antisense primer for PCR amplification of HIV-1 env-98  
  
 <400> 36  
 ataaatgccg gcggctattg ttttattcct aaatttttc 39  
  
 <210> 37  
 <211> 32  
 <212> DNA  
 <213> Artificial Sequence  
  
 <220>  
 <223> sense primer for PCR amplification of HIV-1 env-83  
  
 <400> 37  
 taaataccgc ggttaaattgg cagtctagca ga 32  
  
 <210> 38  
 <211> 33  
 <212> DNA

# sequence listing

<213> Artificial Sequence

<220>

<223> antisense primer for PCR amplification of HIV-1 env-83

<400> 38

attattgccg gcctgttgta aagtgttatt cca

33

<210> 39

<211> 34

<212> DNA

<213> Artificial Sequence

<220>

<223> sense primer for PCR amplification of HIV-1 env-71

<400> 39

aatataccgc ggctaaatga atctgtagta atta

34

<210> 40

<211> 35

<212> DNA

<213> Artificial Sequence

<220>

<223> antisense primer for PCR amplification of HIV-1 env-71

<400> 40

ataatagccg gcggctattg ttttattcct aaatt

35

<210> 41

<211> 34

<212> DNA

<213> Artificial Sequence

<220>

<223> sense primer for PCR amplification of HIV-1 env-98/M

<400> 41

agttcaggaa caagaccatc gcccggccgt atta

34

<210> 42

<211> 35

<212> DNA

<213> Artificial Sequence

<220>

<223> antisense primer for PCR amplification of HIV-1 env-98/M

<400> 42

tctccctaag cttgatcact atctgttgta aagtg

35

<210> 43

# sequence listing

<211> 30  
 <212> DNA  
 <213> Artificial Sequence

<220>  
 <223> sense primer for PCR amplification of PV 2-127

<400> 43  
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<210> 44  
 <211> 30  
 <212> DNA  
 <213> Artificial Sequence

<220>  
 <223> antisense primer for PCR amplification of PV 2-127

<400> 44  
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sequence listing

<210> 45  
 <211> 31  
 <212> DNA  
 <213> Artificial Sequence

<220>  
 <223> sense primer for PCR amplification of PV 2-118

<400> 45  
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<210> 46  
 <211> 30  
 <212> DNA  
 <213> Artificial Sequence

<220>  
 <223> antisense primer for PCR amplification of PV 2-118

<400> 46  
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<210> 47  
 <211> 30  
 <212> DNA  
 <213> Artificial Sequence

<220>  
 <223> sense primer for PCR amplification of PV 3-110

<400> 47  
 ataataccgc ggcacgtagt ccaacgacgc 30

# sequence listing

<210> 48  
<211> 30  
<212> DNA  
<213> Artificial Sequence

<220>  
<223> antisense primer for PCR amplification of PV 3-110

<400> 48  
aataatgccg gcagtgtagt cgtcccatga 30

<210> 49  
<211> 32  
<212> DNA  
<213> Artificial Sequence

<220>  
<223> sense primer for PCR amplification of HCV core-160

<400> 49  
ataataaccgc ggatgagcac aaatcctaaa cc 32

<210> 50  
<211> 32  
<212> DNA  
<213> Artificial Sequence

<220>  
<223> antisense primer for PCR amplification of HCV core-160

<400> 50  
ttaattgccg gcgtcctcca gaagccggac ac 32

<210> 51  
<211> 36  
<212> DNA  
<213> Artificial Sequence

<220>  
<223> sense primer for PCR amplification of HCV core-100

<400> 51  
aatataaccgc ggatgagcac aaatcctaaa cctcaa 36

<210> 52  
<211> 31  
<212> DNA  
<213> Artificial Sequence

<220>  
<223> antisense primer for PCR amplification of HCV core-100

<400> 52

sequence listing  
atatttgccg gcgggtgaca ggagccatcc t 31

<210> 53  
<211> 32  
<212> DNA  
<213> Artificial Sequence

<220>  
<223> sense primer for PCR amplification of HBVsAg-100

<400> 53  
atatatccgc ggcttctgga ctatcaaggt at 32

<210> 54  
<211> 32  
<212> DNA  
<213> Artificial Sequence

<220>  
<223> antisense primer for PCR amplification of HBVsAg-100

<400> 54  
ataaatgccg gcccatataa ctgaaagcca ga 32

<210> 55  
<211> 30  
<212> DNA  
<213> Artificial Sequence

<220>  
<223> sense primer for PCR amplification of HBVsAg-76

<400> 55  
attattccgc ggatggagag catcgcatca 30

<210> 56  
<211> 30  
<212> DNA  
<213> Artificial Sequence

<220>  
<223> antisense primer for PCR amplification of HBVsAg-76

<400> 56  
ataatagccg gcacacatcc agcgataacc 30

<210> 57  
<211> 27  
<212> DNA  
<213> Artificial Sequence

<220>  
<223> sense primer(Sst II/ W2: 2608-2623) for PCR amplification of PV2,3-131



# sequence listing

<400> 57  
attaatccgc gggcgctgac agccgta 27

<210> 58  
<211> 30  
<212> DNA  
<213> Artificial Sequence

<220>  
<223> antisense primer(EcoR I/W2: 2800-2814) for PCR amplification of  
PV2,3-131

<400> 58  
atattagaat tcagttatct tccagactga 30

<210> 59  
<211> 30  
<212> DNA  
<213> Artificial Sequence

<220>  
<223> sense primer(EcoR I/Leon: 2690-2707) for PCR amplification of  
PV2,3-131

<400> 59  
attatcgaat tcgagtccac aatagaatca 30

<210> 60  
<211> 30  
<212> DNA  
<213> Artificial Sequence

<220>  
<223> antisense primer(Eag I/Leon: 2958-2975) for PCR amplification of  
PV2,3-131

<400> 60  
attaatcggc cggtccatgt caaaacgaga 30

<210> 61  
<211> 29  
<212> DNA  
<213> Artificial Sequence

<220>  
<223> sense primer(Sst II/W2 VP1: 253-269) for PCR amplification of  
PV2,3-112

<400> 61  
attaatccgc gggcttgtgt ggccattat 29

<210> 62

# sequence listing

<211> 30  
 <212> DNA  
 <213> Artificial Sequence  
  
 <220>  
 <223> antisense primer(BamH I/W2 VP1: 417-400) for PCR amplification of PV2,3-112  
  
 <400> 62  
 atattaggat cctgtaacca caaaggtgaa 30  
  
 <210> 63  
 <211> 27  
 <212> DNA  
 <213> Artificial Sequence  
  
 <220>  
 <223> sense primer(BamH I/Leon VP1: 274-261) for PCR amplification of PV2,3-112  
  
 <400> 63  
 attatcggat ccgcgtgcgt cgctatt 27  
  
 <210> 64  
 <211> 28  
 <212> DNA  
 <213> Artificial Sequence  
  
 <220>  
 <223> antisense primer(Eag I/Leon VP1: 411-396) for PCR amplification of PV2,3-112  
  
 <400> 64  
 attaatcggc cgggttacca cgaaggtg 28  
  
 <210> 65  
 <211> 30  
 <212> DNA  
 <213> Artificial Sequence  
  
 <220>  
 <223> sense primer(core-Sst II) for PCR amplification of HBVcs  
  
 <400> 65  
 aatataccgc ggttggtggtt tccatttcct 30  
  
 <210> 66  
 <211> 29  
 <212> DNA  
 <213> Artificial Sequence  
  
 <220>  
 <223> antisense primer(core-Hind III) for PCR amplification of HBVcs

# sequence listing

<400> 66  
cctgggaatt ctctaacaac agtagtttc 29

<210> 67  
<211> 30  
<212> DNA  
<213> Artificial Sequence

<220>  
<223> sense primer(surface-Hind III) for PCR amplification of HBVcs

<400> 67  
atatatgaat tcccaggatc atcaaccacc 30

<210> 68  
<211> 33  
<212> DNA  
<213> Artificial Sequence

<220>  
<223> antisense primer(surface-Eag I) for PCR amplification of HBVcs

<400> 68  
ataatagccg gcttttgcga aagcccaaga tga 33

<210> 69  
<211> 30  
<212> DNA  
<213> Artificial Sequence

<220>  
<223> sense primer(BamH I-V3) for PCR amplification of HIV-1 mv3

<400> 69  
accggggatc cactgctgtt aaatggcagt 30

<210> 70  
<211> 28  
<212> DNA  
<213> Artificial Sequence

<220>  
<223> antisense primer(EcoR I-V3) for PCR amplification of HIV-1 mv3

<400> 70  
ctacagaatt caatgttaca atgtgctt 28

<210> 71  
<211> 28  
<212> DNA  
<213> Artificial Sequence

<220>  
<223> sense primer(EcoR I-V3) for PCR amplification of HIV-1 mv3

# sequence listing

<400> 71  
ctacagaatt cattaattgt acaagacc 28

<210> 72  
<211> 28  
<212> DNA  
<213> Artificial Sequence

<220>  
<223> antisense primer(V3-PstI) for PCR amplification of HIV-1 mv3

<400> 72  
caagtctgca gaatgttaca atgtgctt 28

<210> 73  
<211> 28  
<212> DNA  
<213> Artificial Sequence

<220>  
<223> sense primer(PstI-V3) for PCR amplification of HIV-1 mv3

<400> 73  
caagtctgca gattaattgt acaagacc 28

<210> 74  
<211> 32  
<212> DNA  
<213> Artificial Sequence

<220>  
<223> antisense primer(V3-Hind III) for PCR amplification of HIV-1 mv3

<400> 74  
gcattaagct taaatgttac aatgtgcttg tc 32

<210> 75  
<211> 29  
<212> DNA  
<213> Artificial Sequence

<220>  
<223> sense primer(SstII-V3) for PCR amplification of HIV-1 mv3

<400> 75  
aggcctccgc ggattaattg tacaagacc 29

<210> 76  
<211> 29  
<212> DNA  
<213> Artificial Sequence

# sequence listing

<220>  
<223> antisense primer(V3-EagI) for PCR amplification of HIV-1 mv3

<400> 76  
aggcctcggc cgaatgttac aatgtgctt 29

<210> 77  
<211> 30  
<212> DNA  
<213> Artificial Sequence

<220>  
<223> sense primer(PND) for PCR amplification of HIV-1 PND8

<400> 77  
cagaggggac caggagagc attgttaca 30

<210> 78  
<211> 30  
<212> DNA  
<213> Artificial Sequence

<220>  
<223> antisense primer(PND) for PCR amplification of HIV-1 PND8

<400> 78  
cctctgtgta acaaatgctc tccctgtcc 30

<210> 79  
<211> 27  
<212> DNA  
<213> Artificial Sequence

<220>  
<223> sense primer(SstII-PND) for PCR amplification of HIV-1 PND8

<400> 79  
aggcctccgc ggcagagggg accaggg 27

<210> 80  
<211> 30  
<212> DNA  
<213> Artificial Sequence

<220>  
<223> antisense primer(PND-EagI) for PCR amplification of HIV-1 PND8

<400> 80  
aacgttcggc cgtgtaacaa atgctctccc 30

<210> 81  
<211> 77  
<212> DNA

# sequence listing

<213> Artificial Sequence

<220>

<223> primer 1/Sst II for ligation-free PCR amplification of Pvm-150 and Pvm-150/M

<400> 81

attataccgc gggctaaggc cgttgagcc tggaccctga aagccgctgc aggccaagcc 60

tccaccgaag gcgactg 77

<210> 82

<211> 70

<212> DNA

<213> Artificial Sequence

<220>

<223> primer 2 for ligation-free PCR amplification of Pvm-150

<400> 82

gctggctcgc ttgtagggg catcgttatc gacctgatg atggctgggc aaccgcagtc 60

gccttcggtg 70

<210> 83

<211> 70

<212> DNA

<213> Artificial Sequence

<220>

<223> primer 3 for ligation-free PCR of Pvm-150

<400> 83

accaagcgag ccagcaagct cttcagcgaa ttcgaggtcg ataatgagca gccactacc 60

cgagcccaga 70

<210> 84

<211> 70

<212> DNA

<213> Artificial Sequence

<220>

<223> primer 4 for ligation-free PCR amplification of Pvm-150

<400> 84

cgcttagttg gcgcattcatt gtccttgtaa gtgatacgcc acatggcgaa gagcttctgg 60

gctcgggtag 70

<210> 85

<211> 70

<212> DNA

<213> Artificial Sequence

# sequence listing

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<220>
<223> primer 5 for ligation-free PCR amplification of Pvm-150

<400> 85
tgcgccaact aagcgcgcat ctaaactgtg cgtccgaatc tacatgaagc ccaagcacgt 60
tcgatgctcc 70

<210> 86
<211> 70
<212> DNA
<213> Artificial Sequence

<220>
<223> primer 6 for ligation-free PCR amplification of Pvm-150

<400> 86
ttgatgcccg tttggttggt gcgtcggtat ccacttcgat aatagcggga cagccggagc 60
atcgaacgtg 70

<210> 87
<211> 70
<212> DNA
<213> Artificial Sequence

<220>
<223> primer 7 for ligation-free PCR amplification of Pvm-150

<400> 87
ccaaacgggc atcaaagctg gacaactacc agtcccatg cgcgatcaac gagcaaccta 60
ccacccgtgc 70

<210> 88
<211> 82
<212> DNA
<213> Artificial Sequence

<220>
<223> primer 8/Eag I for ligation-free PCR amplification of Pvm-150

<400> 88
tattaacggc cgacaacctg aggggaaccac gacgcgggtc tgatagaagc acccagcgga 60
cttttgcgca cgggtggtag gt 82

<210> 89
<211> 70
<212> DNA
<213> Artificial Sequence

<220>
<223> primer 2 for ligation-free PCR amplification of Pvm-150/M

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# sequence listing

<400> 89  
actggcacgc tttgttgag catcattatc cacttcaata atggctgggc aaccgcagtc 60  
gccttcggtg 70

<210> 90  
<211> 70  
<212> DNA  
<213> Artificial Sequence

<220>  
<223> primer 3 for ligation-free PCR amplification of Pvm-150/M

<400> 90  
acaaagcgtg ccagtaaatt attcagcgaa ttcgaggctg ataatgaaca accaaccacc 60  
cgggcacaga 70

<210> 91  
<211> 70  
<212> DNA  
<213> Artificial Sequence

<220>  
<223> primer 4 for ligation-free PCR amplification of Pvm-150/M

<400> 91  
cgctttgttg gagcatcatt atccttgtaa gtgatacgcc acatggcgaa gagtttctgt 60  
gcccgggttg 70

<210> 92  
<211> 70  
<212> DNA  
<213> Artificial Sequence

<220>  
<223> primer 5 for ligation-free PCR amplification of Pvm-150/M

<400> 92  
tgctccaaca aagcgtgcca gtaaattgtg cgtccgaatc tacatgaagc ccaagcacgt 60  
tcgatgctcc 70

<210> 93  
<211> 70  
<212> DNA  
<213> Artificial Sequence

<220>  
<223> primer 6 for ligation-free PCR amplification of Pvm-150/M

<400> 93  
tactggcacg ctttgttgga gcatcggtat ccacttcaat aatggcggga cagccggagc 60



# sequence listing

atcgaacgtg

70

<210> 94  
<211> 70  
<212> DNA  
<213> Artificial Sequence

<220>  
<223> primer 7 for ligation-free PCR amplification of Pvm-150/M

<400> 94  
caaagcgtgc cagtaaatta gacaactacc agtcccatg cgcgatcaat gaacaaccaa 60  
ccacccgggc 70

<210> 95  
<211> 82  
<212> DNA  
<213> Artificial Sequence

<220>  
<223> primer 8/Eag I for ligation-free PCR amplification of Pvm-150/M

<400> 95  
tattaacggc cgacaacctg aggggaaccac gacgcgggtc tgatagaagc acccagcgga 60  
tttctgtgcc cgggtggttg gt 82